

FAST NEUTRON CROSS SECTIONS OF VANADIUM AND
AN EVALUATED NEUTRONIC FILE^{*}

by

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ABSTRACT

Energy-averaged total cross sections of elemental vanadium were measured from 1.5 to 5.5 MeV. Differential elastic and inelastic neutron scattering cross sections were measured from 1.8 to 4.0 MeV. Neutrons corresponding to the excitation of states in vanadium at 321 ± 10 , 938 ± 15 , 1603 ± 19 , 1811 ± 21 , 2409 ± 27 , ~ 2500 , 2706 ± 30 and 2773 ± 30 keV were observed. From these experimental results an energy-average model was deduced suitable for extrapolating and interpolating the measured values. These results and those reported elsewhere were used to construct a comprehensive Evaluated Neutronic File in the ENDF format with particular attention to higher-energy processes having an impact on FBR, CTR, dosimetry and gas production applications.

^{*}This work supported by the U.S. Energy Research and Development Administration.

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